RESEARCH ARTICLE

KNOWLEDGE ABOUT BREAST CARE AND BREAST CANCER, AND BREAST CARE PRACTICES OF A SAMPLE OF PHILIPPINE NORMAL UNIVERSITY WOMEN: BASIS FOR CURRICULAR INTEGRATION AND HEALTH PROGRAM

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Abstract

With the descriptive survey as research method, data on the practices and extent of knowledge about breast care and breast cancer were gathered from a sample of PNU women - administrative staff and selected female students, using a questionnaire adopted from Pagkatipunan's KAP Survey Tool for Breast Care (2011). Findings revealed that the respondents have a fair knowledge about breast cancer; aware of the factors that increase the risk of breast cancer like smoking, family history of breast cancer, lack of physical activity, use of oral contraceptives, alcohol drinking, and exposure of the breasts to radiation. They know about breast self-examination (BSE) and clinical breast examination (CBE). A few know about mammography. Some of them perform BSE monthly, but very few undergo CBE. They agreed that it is important to do regular exercises to improve one's health, and that a woman should take care of herself and her breasts to avoid breast cancer and stay healthy. A year-round health care program including proper breast care, and integration of breast care information in the curriculum, particularly in the biological sciences, were recommended for implementation in the University.

***Key Terms**: breast care, breast cancer, health care program*

INTRODUCTION

Self-Breast Care Program is one of the health promoting projects of the South Manila-Inter Institutional Consortium (SM-IIC) and the U-belt Consortium. The PNU is one of the health promoting schools in this program.

A study conducted by Wu, Scheffer and Lee (2012) among Asian Indian women revealed that breast cancer is the most frequently diagnosed cancer and number one killer of Asian American women. Lostao et al (2001) also revealed in their research that breast cancer represents one of the main causes of mortality in industrialized countries. They cited the U.S.A. as an example, where one in nine women develops breast cancer during her lifetime. Wu, Liu and Chung (2012) also mentioned that breast cancer is a major public health issue and the most commonly diagnosed cancer for women worldwide, and that the incidence of breast cancer is rising. These facts are very alarming, especially in an educational institution like the Philippine Normal University, where more than ninety percent of the populations are women.

Lack of knowledge and awareness about breast cancer could pose a potential threat and become more lethal when taken for granted. Implementing rules and guidelines regarding breast care imply an understanding of how significant it is to take care of one's health. Proper education and awareness are benchmarks in disease prevention that could change the attitude of an individual towards health concerns.

One way to avoid contracting any disease is to take good care of our health and our body. Precautionary measures have to be done to prevent an illness from getting into our body system.

Aware of the prevalence of breast cancer in the Philippines and throughout the world and the need to take measures to prevent its occurrence among women, the PNU academic institution that is predominantly women, participated in the joint program of the South Manila- Inter Institutional Consortium (SM-IIC) and the U-belt Consortium on breast cancer prevention.

One project related to breast care which PNU embarked on is the

Training/Orientation Program on Self-Breast Care for the Prevention of Breast Cancer, which was participated in by interested women in the University. For the sustainability of the program, curricular integration of breast care and a health program were proposed, based on the level of awareness and the actual practices on breast care of the faculty, staff and students in the University, and also from the literature.

Figure 1 shows the conceptual framework of the research.

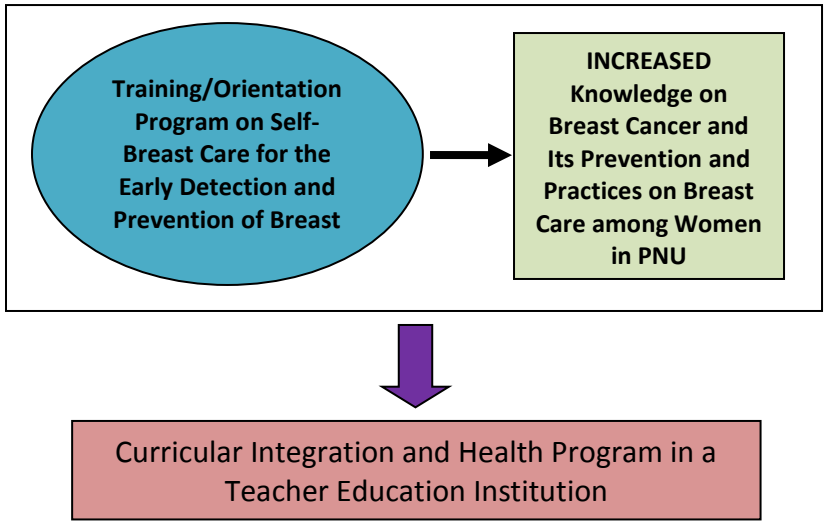

Figure 1. The Conceptual Framework

STATEMENT OF THE PROBLEM

This study aimed to design a breast care program that may be implemented in the University, and to recommend possible subjects/ topics that may be integrated in the teacher education curriculum. The aforesaid program will likely provide opportunity for women in the University to become aware of the prevalence of breast cancer among women and on the measures to be undertaken for its early detection and prevention of such disease.

Specifically, this study aimed to shed light on these questions:

1. What is the extent of knowledge of the respondents about:
   1.1 the factors that increase the risk of breast cancer
   1.2 breast care
      1.2.1 Breast self-examination
      1.2.2 Clinical breast examination
      1.2.3 Mammography
2. What preventive measures, health promotion strategies and breast care practices have been applied by the respondents to prevent the occurrence of breast cancer?
3. What intervention program can be proposed to promote awareness of breast care and the early detection and prevention of breast cancer among women in a teacher education institution?

METHODOLOGY

Using the descriptive survey method, the research adopted a questionnaire from the study of Pagkatipunan (2011) to gather the necessary data. The participants of the study were selected students in the undergraduate level and administrative staff purposively chosen based on the following criteria: 1) willingness to undergo training on breast care; and 2) willingness to commit to train others to spread the information gained from the training.

An orientation was conducted in February 2012. One of the members of this research team who is a medical doctor and a faculty of the Department of Biological Sciences served as resource speaker in this orientation. He discussed matters about proper breast care and breast cancer. The participants were shown how to do breast self-examination. One faculty, a few administrative staff and several undergraduate students attended the orientation in which the participants were instructed to do regular breast self-examination, and certain physical exercises that would promote healthy breasts. The respondents were requested to accomplish the Informed Consent Form signifying their willingness to be part of the study immediately after the orientation. The administrative staff filled up their own consent forms, but the students brought home

their forms for their parents' signature.

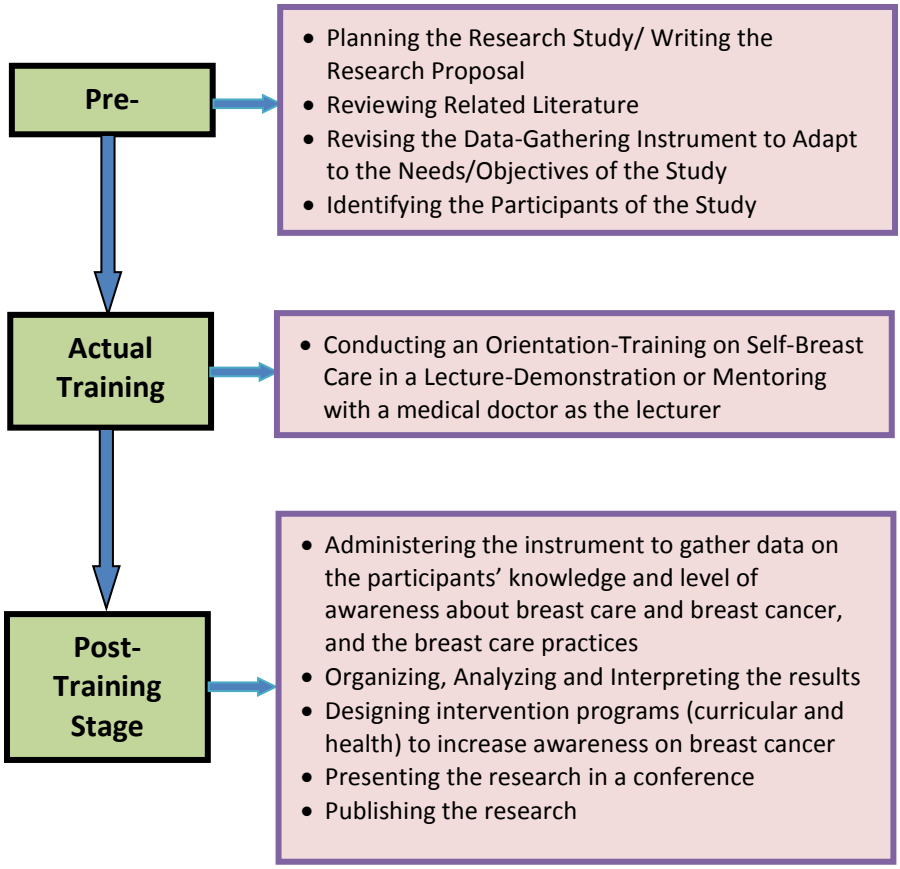

Figure 2. The Research Process toward the Development of Intervention Programs to Increase Awareness on Breast Care and Breast Cancer

After the orientation, the participants formed groups with 8 to 12 members each – six groups of students and two groups of administrative staff/faculty. Each group chose a team leader, with the students having student team leaders, and the administrative staff having the three co-researchers as team leaders. The team leaders were instructed to regularly monitor the activities of their members. They gathered data on the menstruation dates of their

members so that they could remind them to do their BSE regularly.

To readily analyze the data gathered, only descriptive statistics like frequencies, percentages and means were computed. The frequencies and percentages were computed for the demographic profile of the respondents and for the data pertaining to the knowledge and practices of the respondents. Weighted means were computed for the respondents' extent of knowledge about breast care and breast cancer.

Figure 2 shows the procedure in the conduct of this research.

Timetable of Activities

Table 1. Gantt Chart of the Research Process.

Stage	Activities	October 2011-April 2013					
		Oct-Dec 2011	Jan-Feb 2012	Mar-Jun 2012	Jul-Sep 2012	Oct-Dec 2012	Jan-Apr 2013
Pre-Training Stage	Planning the research study						
	Review of related documents, and literature						
	Adapting/Revising the existing data-gathering instrument to suit the purpose of the study						
	Identifying the participants of the study						
Training Stage	Conducting the Training on Self-Breast Care in a Plenary Lecture-Demonstration or Mentoring						
Post-Training Stage	Gathering of data on the knowledge and level of awareness about breast care and breast cancer, and the breast care practices of the participants						
	Organizing the data gathered						
	Analyzing the results						

Post-Training Stage	Designing intervention programs (curricular and health) to increase awareness on breast care and breast cancer						
	Writing the research report						
	Editing the research report for publication						
	Disseminating/Publishing the research						

The Respondents of the Study

The respondents were those who participated in the actual breast care program implemented right after the orientation. Many attended the orientation, but the men were excluded in the actual study intended solely for women. The participants numbered 109: 42 administrative staff and 67 students – all underwent the activities prescribed and monitored by their team leaders. The survey instrument was administered to them after the program.

The majority of the administrative staff was married and was 30 years old or older, having an average age of 42.79.

Almost all the student-respondents were single, with ages ranging from 15 to a little more than 20 years old, to which regular college students belong. Their average age was 19.97, a little high because most of the respondents were third and fourth year students.

The majority of the administrative staff who participated in the study was 30 years old or older with average age of 42.79.

The majority of the students had ages within the regular age bracket of college students, which is 15-19 years old, their average age 19.97.

Six of the administrative staff and none of the students reported that they have had lumps or mass in their breasts.

Table 2. Responses to the Question on Whether or Not the Respondents Ever Experienced Having Lumps or Mass in their Breasts.

Response	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Yes	6	14.29	0	0.00
No	36	85.71	67	100.00
Total	42	100.00	67	100.00

Nine (9) of the administrative staff and 29 of the student-respondents claimed that there is/are family member/s who have/had breast cancer.

Table 3 Responses to the Question on Whether or Not the Respondents Had a Family History of Breast Cancer

Response	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Yes (my family)	9	21.43	29	43.28
No	33	78.57	38	56.72
Total	42	100.00	67	100.00

As shown in Table 4, most of the respondents, 42.86% of the administrative staff, and 71.64% of the student-respondents had a fair amount of information about breast cancer. About 33.33% of the administrative staff, and 8.96% of the student-respondents claimed that they had little or no information at all on breast cancer. Less than 20% of both groups of respondents were very much informed about breast cancer. Kyle et al (2012), in their study about cancer awareness among adolescents in Britain, came up with a similar result, that is, adolescents' cancer awareness and knowledge are low. They concluded that interventions to raise adolescents' cancer awareness and knowledge have a potential for a life-long impact on encouraging early diagnosis and survival.

Table 4. Frequency and Percentage Distributions of the Respondents' Self-Assessment of Their Level of Information about Breast Cancer

Response	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Not Informed at all	2	4.76	0	0.00
Little Information	12	28.57	6	8.96
Fair Amount of Information	18	42.86	48	71.64
Very Much Informed	8	19.05	13	19.40
No Answer	2	4.76	0	0.00
Total	42	100.00	67	100.00

The most popular sources of information among the majority of the administrative staff were newspapers and magazines (80.95%);

health professionals (73.81%); TV/Radio (73.81%); and friends/neighbors (66.67%).

For the students, the most common sources of information were seminars and health programs (92.54%), the majority of whom got their information from the Internet (59.70%), TV/Radio (56.72%), and pamphlets (55.22%). Not one of the students claimed that she obtained her information from their lessons in the classroom, or from books.

Table 5. The Sources of Information About Breast Cancer Among the Respondents.

Source of Information	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Health Professionals	31	73.81	32	47.76
Newspapers/Magazines	34	80.95	30	44.78
Friends/Neighbors	28	66.67	28	41.79
TV/Radio	31	73.81	38	56.72
Internet	25	59.52	40	59.70
Seminars/Health Programs	22	52.38	62	92.54
Posters	23	54.76	22	32.84
Pamphlets	22	52.38	37	55.22
Breast Cancer Patients	2	4.76	0	0.00
Personal Experience	0	0.00	1	1.49
Lessons in the Classroom	0	0.00	0	0.00
Others (Books)	1	2.38	0	0.00

Note: Multiple answers were allowed.

Question No. 1 The Respondents' Knowledge about the Factors that Increase the Risk of Breast Cancer and about Breast Care

1.1 Knowledge about the Factors that Increase the Risk of Breast Cancer

The majority of the administrative staff believed that these factors increase the risk of breast cancer: 1) smoking; 2) family history of breast cancer; and 3) lack of physical activity. They also believed that having cancer in one breast increases the probability of having it in the other breast. More than one-third of them held that the following make a woman more prone to cancer: 1) old age; 2) alcohol drinking; and 3) high fat diet. The majority of them, however, disclaimed that: 1) the more children a woman has, the more she is prone to breast cancer; 2) frequent breast feeding increases the risk of breast cancer; 3) a woman who has her first pregnancy after 30 years old is more prone to breast cancer; and 4)

never been pregnant decreases the risk of breast cancer among women. Furthermore, the results in Table 6 show the administrative staff's beliefs about the factors that increase the risk of breast cancer. However, the respondents also refuted the belief that pregnancy after age 30 would make one less prone to breast cancer. Such belief is inaccurate. Evidence shows that women who have their first pregnancy at a late age are more prone to breast cancer (Horn, Asvold, Opdahl, Tretli & Vatten, 2013). Other factors that may cause breast cancer which the administrative staffs were unaware of include obesity, the use of oral contraceptives, and radiation exposure of the breasts.

Table 6. Frequency of the Administrative Staff's Responses as to Their Beliefs/ Knowledge about the Possible Factors that Increase the Risk of Breast Cancer. (N = 42)

	Factors that Increase the Risk of Breast Cancer	Yes	No	Don't know	n.a
1.	The older the woman is, the more prone she is to breast cancer.	16	16	10	0
2.	The more children a woman has, the more she is prone to breast cancer.	0	24	18	0
3.	If menstruation starts after 11 years old, the woman will be prone to breast cancer.	0	19	22	1
4.	If menstruation stops after age 50, the more a woman will be prone to breast cancer.	5	18	16	3
5.	Use of oral contraceptives makes a woman more prone to breast cancer.	12	12	17	1
6.	Smoking increases the risk of breast cancer.	23	7	11	1
7.	Frequent breast massage increases the risk of breast cancer.	2	19	16	5
8.	Alcohol increases the risk of breast cancer.	18	10	12	2
9.	A family history of breast cancer increases the risk of breast cancer.	27	4	8	3
10.	Frequent breast feeding increases the risk of breast cancer.	3	25	12	2
11.	If the first pregnancy occurs after 30 years old, a woman is more prone to breast cancer.	3	14	23	2
12.	Never having been pregnant decreases the risk of breast cancer.	0	42	0	0
13.	Radiation exposure of the breast increases the risk of breast cancer.	9	9	23	1
14.	Obesity increases the risk of breast cancer.	10	12	17	3

15. Lack of physical activity increases the risk of breast cancer.	22	7	10	3
16. High fat diet increases the risk of breast cancer.	16	12	12	2
17. Having cancer in one breast increases the probability of having it on the other breast.	27	6	8	1

The majority of the student-respondents believed that the following increase the risk of breast cancer: 1) old age; 2) menstruation at age 11 or younger, 3) menopause after age 50, 4) use of oral contraceptives; 5) smoking; 6) alcohol drinking; 7) family history of breast cancer; 8) first pregnancy after age 30, 9) radiation exposure of the breast; 10) obesity; 11) lack of physical activity, and 12) high fat diet. They also held that having cancer in one breast increases the probability of having it in the other breast. They are right in their beliefs, because all their choices as to the factors that increase the risk of breast cancer are true. They did not believe, however, that women, who bear more children, have frequent breast massage and frequent breast feeding would make a woman more prone to cancer. Neither did they hold that never having any children decreases the risk of breast cancer. They are right also about the non-causes of breast cancer; however, they should know that the age at which one starts having menstruation, and the age one stops having menstruation do not run risk of breast cancer.

Breast cancer, like other forms of cancer, can result from multiple environmental and hereditary risk factors. The term "environmental", as used by cancer researchers, means any risk factor that is not genetically inherited. For breast cancer, the environmental risk factors include the individual person's development, exposure to microbes, "medical interventions, dietary exposures to nutrients, energy and toxicants, ionizing radiation, and chemicals from industrial and agricultural processes and from consumer products... reproductive choices, energy balance, adult weight gain, body fatness, voluntary and involuntary physical activity, medical care, exposure to tobacco smoke and alcohol, and occupational exposures, including shift work" as well as "metabolic and physiologic processes that modify the body's internal environment." (Institute of Medicine, 2012)

Table 7. Frequency of the Students' Responses as to Their Beliefs/Knowledge about the Possible Factors that Increase the Risk of Breast Cancer. (N = 67)

Factors that Increase the Risk of Breast Cancer	Yes	No	Don't Know	n.a
1. The older the woman is, the more prone she is to breast cancer.	54	9	4	0
2. The more children a woman has, the more she is prone to breast cancer.	17	42	7	1
3. If menstruation starts after 11 years old, the woman will be prone to breast cancer.	34	23	10	0
4. If menstruation stops after age 50, the more a woman will be prone to breast cancer.	40	15	12	0
5. Use of oral contraceptives makes a woman more prone to breast cancer.	47	13	7	0
6. Smoking increases the risk of breast cancer.	60	7	0	0
7. Frequent breast massage increases the risk of breast cancer.	4	54	8	1
8. Alcohol increases the risk of breast cancer.	54	6	7	0
9. A family history of breast cancer increases the risk of breast cancer.	61	3	2	1
10. Frequent breast feeding increases the risk of breast cancer.	6	58	3	0
11. If the first pregnancy occurs after 30 years old, a woman is more prone to breast cancer.	45	11	10	1
12. Never having been pregnant decreases the risk of breast cancer.	28	31	7	1
13. Radiation exposure of the breast increases the risk of breast cancer.	54	10	3	0
14. Obesity increases the risk of breast cancer.	55	5	6	1
15. Lack of physical activity increases the risk of breast cancer.	63	3	1	0
16. High fat diet increases the risk of breast cancer.	51	8	7	1
17. Having cancer in one breast increases the probability of having it on the other breast.	57	7	3	0

Some factors mentioned above resemble those that increase the risk of breast cancer included in the questionnaire in this study: 1) reproductive choices – the women's desire to postpone getting pregnant at a later age; 2) adult weight gain or obesity; 3) body fatness – too much fat intake; 4) involuntary physical activity; and 5) exposure to tobacco smoke and alcohol.

The risk of getting breast cancer increases with age, so that a woman is more than 100 times more likely to develop the disease in her 60s than in her 20s (Margolese, 2011). If all women lived to age 95, about one in eight would be diagnosed with breast cancer at some point during their lives (Olson, 2002).However, the actual lifetime risk is lower than that, because 90% of women die before age 95, most commonly from heart attacks, strokes, or other forms of cancer.

According to Mya (2011), gaining weight after menopause can increase a woman's risk. A 2006 study found that putting on 9.9 kg (22 lbs.) after menopause increased the risk of developing breast cancer by 18%.Lack of exercise has been linked to breast cancer by the American Institute for Cancer Research (Ligibel, 2011).

Obesity has been also linked to an increased risk of developing breast cancer by many scientific studies (Protani et al, 2010). There is evidence to suggest that excess body fat at the time of breast cancer diagnosis is associated with higher rates of cancer recurrence and death. Furthermore, studies have shown that obese women are more likely to have larger tumors, greater lymph node involvement, and poorer breast cancer prognosis with 30% higher risk of mortality (Kroenke, 2005).

Some factors identified by the respondents resemble those mentioned by Surtees et al (2010) as those that can cause breast cancer: old age, menopausal status, parity, menopausal hormones, age at menarche, age at first childbirth, family history of breast cancer, physical activity, social class, body mass index, height and alcohol intake.

1.2 The Respondents' Knowledge about Breast Care

1.2.1 Breast Self-Examination

More than 90% of the respondents, both the administrative staff (90.48%) and the students (98.51%) know about breast self-examination (BSE). Only three administrative staff and one student did not know about it.

Table 8. Responses to the Questions on Whether or Not the Respondents Had Knowledge About Breast Self-Examination.

Response	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Yes	38	90.48	66	98.51
No	3	7.14	1	1.49
No Answer	1	2.38	0	0.00
Total	**42**	**100.00**	**67**	**100.00**

The majority of the respondents believed that BSE should start during one's teen years. These participants are right in their belief that a woman should start breast self-examination as early as during teen years.

The majority of both groups of respondents answered that BSE should be done every month, while others claimed that the time interval could be much longer.

Table 9. The Respondents' Responses on the Proper Age to Start Breast Self-Examination.

Age	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Teens to 20 years	26	61.90	60	89.56
30 years	10	23.81	5	7.46
40 years	2	4.76	2	2.98
50 years	0	0.00	0	0.00
Don't know	4	9.52	0	0.00
No Answer	0	0.00	0	0.00
Total	**42**	**99.99**	**67**	**100.00**

Table 10. The Respondents' Responses as to the Frequency in Which a Woman Should Undertake Breast Self-Examination.

Frequency of Undertaking BSE	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Every month	26	61.90	58	86.57
Every three months	4	9.52	6	8.96
Every six months	6	14.29	1	1.49
Every year	3	7.14	2	2.98
Don't know	3	7.14	0	0.00
Total	**42**	**99.99**	**67**	**100.00**

Not all those who have knowledge about breast self-examination know how often it should be undertaken. But the percentages (61.90% among the administrative staff and 86.57% among the student-respondents) are still higher, as compared to the 20% of the

Chinese women in the study of Wu (2012), who knew about the appropriate time interval to conduct breast examinations. Many respondents in the present study had knowledge about this because they were given an orientation before the program started.

1.2.2 Clinical Breast Examination

The majority of the respondents knew about clinical breast examination (CBE), but about one-third of the administrative staff and less than 30% of the students still did not know about it.

Table 11. Responses to the Question on Whether or Not the Respondents Knew About Clinical Breast Examination (CBE).

Response	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Yes	25	59.52	46	68.66
No	14	33.33	19	28.36
No Answer	3	7.14	2	2.98
Total	**42**	**99.99**	**67**	**100.00**

When asked about the age at which a woman should start undergoing CBE, the administrative staff was divided in terms of their responses, but the bigger number of them said they should be undergoing CBE starting at age 30.

Among the students, the majority said that CBE should start during their teens, although the others said it can start at a later age.

Table 12. The Respondents' Responses on the Proper Age to Start Clinical Breast Examination.

Age	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Teens to 20 years	13	30.95	35	52.23
30 years	17	40.48	15	22.39
40 years	4	9.52	14	20.90
50 years	0	0.00	3	4.48
Don't know	7	16.67	0	0.00
No Answer	1	2.38	0	0.00
Total	**42**	**100.00**	**67**	**100.00**

More than one-third (35.71%) of the administrative staff said that women should undergo CBE every six months, and exactly the same percentage of them suggested every year.

Similarly, this percentage (34.33%), also more than one-third of the student-respondents, said CBE should be undertaken every six months and every year.

Less than 20% of the administrative staff did not know how often CBE should be undertaken, while more than 22% of the student respondents said CBE should be undertaken every three years.

The American Cancer Society (2007) recommended that women in their 20's and 30's should make CBE a part of their periodic health examination, preferably at least every three years. Furthermore, the society suggests that beginning in their 20's, women should be told about the benefits and limitations of breast self-examination. The importance of prompt reporting of any new breast symptoms to a health professional should be emphasized. Women who choose to do BSE should receive instruction and have their technique reviewed during periodic health examination.

Table 13. The Respondents' Responses as to the Frequency in Which a Woman Should Undergo Clinical Breast Examination.

Frequency of CBE	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Every six months	15	35.71	23	34.33
Every year	15	35.71	23	34.33
Every two years	2	4.76	2	2.98
Every three years	1	2.38	15	22.39
Don't know	8	19.05	4	5.97
No Answer	1	2.38	0	0.00
Total	**42**	**99.99**	**67**	**100.00**

Most of the respondents said that the best time to do breast examination is seven days after menses. A few said it should be done before menses or anytime. The right answer is seven days after menses, according to the doctors, and so most of the respondents were right.

Table 14. The Respondents' Responses as to the Best Time to Undergo Any Breast Examination.

Best Time to Undergo Breast Examination	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
During menses	2	4.76	5	7.46
Seven days after menses	18	42.86	52	77.61
Before menses	7	16.67	9	13.43

Anytime	5	11.90	1	1.49
Don't know	8	19.05	0	0.00
No Answer	2	4.76	0	0.00
Total	**42**	**100.00**	**67**	**99.99**

1.2.3 Mammography

Most respondents in both groups believed that women should start submitting themselves for mammography at the age of 40 years old. Six of the administrative staff answered 20 years old, and another six of them answered 30 years old. More than 25% of the students believed that the start of mammography among women is at age 50. The respondents are correct in saying that women should start undergoing mammography at the age of 40.

Table 15. The Respondents' Responses as to the Appropriate Age for a Woman to Start Undergoing Mammography.

Age	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
20 years	6	14.29	3	4.48
30 years	6	14.29	9	13.43
40 years	13	30.95	31	46.27
50 years	3	7.14	18	26.86
Don't know	14	33.33	6	8.96
Total	**42**	**100.00**	**67**	**100.00**

About 50% of both the administrative staff and student-respondents believed that women should undergo mammography every year, but still others said it should be every six months, every two years or every three years. A number of the administrative staff and five of the students said they did not know how often a woman should undergo mammography. The doctors say that a woman should undergo mammography once a year, starting at 35 years old.

The American Cancer Society's advice for older women was to individualize their screening decisions by considering the potential benefits and risks of mammography in the context of current status and estimated life expectancy. They also recommended that women who have a lifetime risk of breast cancer exceeding 20%-25%, including women who have a strong family of breast and/or ovarian cancer and women who were treated for Hodgkin's

disease be screened with annual mammogram and annual MRI.

Question No. 2 The Respondents' Breast Care Practices

2.1 Breast Self-Examination (BSE)

The majority of the respondents, 69.05% of the administrative staff and 88.06% of the students, claimed doing that they performed breast self-examination. More than this percentage of respondents claimed that they knew about BSE, but not all of them performed it for lack of time, they didn't know how to do it, they didn't see the need for doing it, because they didn't feel that something was wrong with their breasts. Others just didn't remember doing BSE, even if they knew how to.

Similar reasons were given by the respondents of Wu et al (2012) in their study. These are: low priority, feeling ok, lack of awareness/knowledge toward breast cancer screening. Specific reasons that prevented the same respondents from having cancer screening were: "too much trouble getting a screening", "took too much time", "lazy", "don't need it because I feel ok", "no symptoms", "I am healthy", "never got any breast disease before," "don't feel abnormal", don't need it as there is no breast pain", and "don't feel lumps and abnormality."

Table 16. Responses to the Question on Whether or Not the Respondents Performing Breast Self-Examination.

Response	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Yes	29	69.05	59	88.06
No	11	26.19	2	2.98
No Answer	2	4.76	6	8.96
Total	**42**	**100.00**	**67**	**100.00**

Table 17. The Frequency in Which the Respondents Performed Breast Self-Examination.

Frequency in Performing BSE	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Daily	3	7.14	1	1.49
Weekly	2	4.76	5	7.46
Monthly	18	42.86	50	74.63
Others	4	9.52	3	4.48
No Answer	15	35.71	8	11.94
Total	**42**	**99.99**	**67**	**100.00**

Most of those who performed BSE did the exercise monthly (42.86% of the administrative staff and 74.63% of the students), seven days after their menstruation. The respondents were monitored by their respective team leaders, a regular routine while the study was being conducted.

2.2 Clinical Breast Examination (CBE)

Of the 25 administrative staff who knew about Clinical Breast Examination, 19 had been undergoing CBE, while 13 out of the 46 students who knew about CBE were actually submitting themselves for the examination.

Table 18. Frequency and Percentage Distributions of the Respondents Who Underwent Clinical Breast Examination (CBE).

Response	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Yes	19	45.24	13	19.40
No	10	23.81	41	61.19
No Answer	13	30.95	13	19.40
Total	**42**	**100.00**	**67**	**99.99**

Eight of the administrative staff and eleven students submitted to the school physician for CBE, although only one of the administrative staff and one (1) student were clinically examined by the school physician. Other medical personnel performed the CBE on nine administrative staffs and one student.

Table 19. Medical Personnel Who Performed the Clinical Breast Examination of the Respondents.

Response	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
School Physician	1	2.38	1	1.49
Physician	8	19.05	11	16.42
Others	9	21.43	1	1.49
No Answer	24	57.14	54	80.60
Total	**42**	**100.00**	**67**	**100.00**

Nineteen (45.24%) of the administrative staff underwent CBE at least once last year, while three of them had CBE once in the last three to five years. Ten (14.93%) of the student-respondents underwent CBE at least once last year, and four (5.97%) of them had CBE once in the last three to five years.

Table 20. The Frequency in which the Respondents' Submitted for Clinical Breast Examination.

Frequency in Undergoing CBE Among the Respondents	Administrative Staff		Students	
	Frequency	Percentage	Frequency	Percentage
Once in the last five years	2	4.76	1	1.49
Once in the last three years	1	2.38	3	4.48
Once last year	17	40.48	8	11.94
Once in the last three months	2	4.76	2	2.99
Others	2	4.76	0	0.00
No Answer	18	42.86	53	79.10
Total	**42**	**100.00**	**67**	**100.00**

2.3 Health Promoting Exercises

The most common health-promoting exercises among the administrative staff were walking briskly, and climbing up and down the stairs. At least 17 of them did these two exercises every day. The others did them once to five times a week. Very few of them did these exercises just once a month.

The same exercises were commonly observed among the majority of the students. This means that the students perform the exercises everyday or four times a week in contrast to those of the administrative staff.

Table 21. The Health-Promoting Exercises by the Administrative Staff.

Activity	Frequency					Others	n.a
	5	4	3	2	1		
8.1 Walking briskly	18	3	4	8	2	0	7
8.2 Climbing up and down the stairs	17	4	4	4	4	0	9
8.3 Bicycling	0	0	1	2	6	11	12
8.4 Dancing	2	1	4	7	9	7	12

Legend: 5 – everyday; 4 – five times a week; 3 – three times a week; 2 – once a week; 1 – once a month

None of the administrative staff and the student-respondents did bicycling. Only one administrative staff and two students did so three times a week, while two administrative staff and eight students did this kind of exercise once a week. Six administrative staff and 23 students admitted that they did the exercise only once a month. Two administrative staff and four students exercised through dancing every day. Several of them claimed that they danced three to five times a week, while 16 of the administrative staff and 37

of the student-respondents said they danced once a week or once a month only.

The administrative staff did the two exercises – walking briskly and climbing up and down the stairs--for five minutes to one hour. The majority of the students walked briskly and climbed up and down the stairs for 30 minutes to one hour, and a few did the two exercises for five to 20 minutes.

Two administrative staff did bicycling for 30 minutes or one hour, the others did this exercise for about 5 to 20 minutes only, while six administrative staff and 11 students danced for 30 minutes to one hour.

2.4 The Respondents' Health Promotion Strategies/Breast Care Practices

Tables 21 to 26 show the different health promotion strategies undertaken by the respondents, with weighted mean computed for each item. The four-point rating scale used to determine the respondents' degree of agreement to each statement on health care strategy has the following values and their equivalents: 1 – Strongly Disagree; 2 – Disagree; 3 – Agree; and 4 – Strongly Agree. To interpret the weighted means obtained, the following ranges of values were used:

3.50-4.00	Strongly Agree (SA)
1.50-2.49	Disagree (D)
2.50-3.49	Agree (A)
1.00-1.49	Strongly Disagree (SD)

Table 22. The Health-Promoting Exercises Indulged by the Student-Respondents.

Activity	Frequency					Others	n.a
	5	4	3	2	1		
8.1 Walking briskly	43	17	5	2	0	0	0
8.2 Climbing up and down the stairs	46	14	5	0	1	0	1
8.3 Bicycling	0	0	2	8	23	5	19
8.4 Dancing	4	4	8	13	24	2	2

Legend: 5 – everyday; 4 – five times a week; 3 – three times a week; 2 – once a week; 1 – once a month

Table 23. Length of Time Spent by the Administrative Staff in Doing the Exercise.

Activity	Length of Time					Others	n.a.
	5	4	3	2	1		
8.1 Walking briskly	6	8	7	7	4	0	10
8.2 Climbing up and down the stairs	6	3	2	6	13	0	12
8.3 Bicycling	1	1	3	1	4	5	27
8.4 Dancing	2	4	2	3	6	4	21

Legend: 5 – one hour; 4 – 30 minutes; 3 – 20 minutes; 2 – 10 minutes; 1 – 5 minutes

Table 24. Length of Time Spent by the Student-Respondents in Doing the Exercise.

Activity	Length of Time					Others	n.a.
	5	4	3	2	1		
8.1 Walking briskly	33	24	5	4	0	0	1
8.2 Climbing up and down the stairs	34	20	8	2	1	0	2
8.3 Bicycling	0	0	2	8	24	16	17
8.4 Dancing	4	7	9	9	20	3	15

Legend: 5 – one hour; 4 – 30 minutes; 3 – 20 minutes; 2 – 10 minutes; 1 – 5 minutes

2.4.1 The Administrative Staff's Health Promotion Strategies/ Breast Care Practices

Table 21 shows the different health promotion strategies undertaken by the administrative staff respondents. These strategies were classified into: 1) those that the individual can do herself, 2) those that can be done with the assistance of a health professional, including the medical doctor, and 3) the negative statements. The respondents were asked about the extent to which they agreed to each statement.

Notably, eight out of the nine items that the individuals can do themselves got ratings interpreted as "Agree," having obtained means ranging from 2.67 to 3.46. Only one item got a mean rating of 3.59, which is interpreted as "Strongly Agree." An average rating of 3.13, interpreted as "Agree," was obtained for the first group of items, those that the respondents can do themselves. The lowest mean ratings of 2.67 and 2.76 were obtained for the following items: 1) I am sure of the steps to follow in doing breast self-examination,

and 2) I am confident I can perform breast self-examination correctly. This finding implies that the respondents need to be given orientation on how to undertake breast self-examination.

The five health promotion strategies which need the assistance of health professionals got mean ratings ranging from 2.92 to 3.35, all interpreted as "Agree." The mean rating obtained for this group of items was 3.14, also interpreted as "Agree". The lowest mean rating of 2.92 was obtained for the item, "Regarding my breast health, I can only do what my doctor tells me to do." It is good to note that the respondents are aware that the health professionals can help them to keep their breasts healthy to avoid breast cancer.

The four negative items are not really health promotion strategies, but pertain to how a person feels about breast cancer. Notably, the general response when asked if they were likely to get breast cancer in the future, was "Disagree," meaning that they are optimistic of not getting breast cancer. A few of them, however, said they were likely to have breast cancer in the future. Most of them also disagreed that they didn't have enough time to exercise, but there are others who claimed that they had no time for exercise at all. Many of them agreed that they are afraid of breast cancer.

Table 25. Weighted Means of the Administrative Staff's Responses as to their Breast Care Practices.

Health Promotion Strategies for Breast Care	Mean	Interpretation
A. Those that can be done by an individual		
1. I am confident I can perform breast self-examination correctly.	2.76	Agree
2. If I complete my daily exercise regimen during the next year, it will decrease my chance of having breast cancer.	2.97	Agree
3. I feel that exercising at least five times a week will decrease my chance of having breast cancer.	2.92	Agree
4. When I complete monthly breast examination, I don't worry as much about breast cancer.	3.00	Agree
5. I feel it is important to exercise to improve my health.	3.59	Strongly Agree
6. I am sure of the steps to follow in doing breast self-examination.	2.67	Agree
7. If I take care of myself, I can avoid breast cancer.	3.33	Agree
8. If I take the right actions, my breasts will stay healthy.	3.45	Agree

	9. I can pretty much stay healthy by taking care of myself.	3.46	Agree
	Average	***3.13***	***Agree***
B.	Those that can be done with the assistance of a health professional		
	10. I have regular health check-ups to know if I have breast cancer.	3.13	Agree
	11. Going to the clinic for clinical breast examination will help me find lumps easily.	3.35	Agree
	12. I know health professional can perform clinical breast examination.	3.28	Agree
	13. Regarding my breast health, I can only do what my doctor tells me to do.	2.92	Agree
	14. I can only maintain my breast health by consulting health professionals.	3.03	Agree
	Average	3.14	Agree
C.	Negative Statements		
	15. It is extremely likely I will get breast cancer in the future.	1.55	Disagree
	16. The thought of breast cancer scares me.	2.86	Agree
	17. I am afraid to think about breast cancer.	2.89	Agree
	18. I don't have enough time to exercise.	2.39	Disagree
	Average	***2.42***	***Disagree***
	Overall Average	***2.90***	***Agree***

It is insufficient that the respondents only agreed to the statements about the health promotion strategies; they should be more convinced that the health promotion strategies are vital in keeping a person healthy and in living a long life. Thus, the need for an intervention program to promote greater awareness.

2.4.2 The Students' Health Promotion Strategies/Breast Care Practices

Under the first classification of strategies, those that the respondents can do themselves, the items obtained mean ratings ranging from 3.03 to 3.36, and an average of 3.29, all interpreted as "Agree." The highest mean rating of 3.36 was obtained for the item, "I feel it is important to exercise to improve my health," this is a good indication because awareness among student-respondents is tantamount to bring aware of the importance of exercise in their life.

Lower mean ratings were obtained for the breast care practices which the respondents can only do with the assistance of health

professionals. Although a mean rating of 3.67, interpreted as "Strongly Agree", was obtained for one item, "Going to the clinic for clinical breast examination will help me find lumps easily." The average rating obtained for this group of breast care practices is 3.02, interpreted as "Agree.", while the mean ratings for the individual items range from 2.68 to 3.67.

Table 26. Weighted Means of the Students' Responses as to their Breast Care Practices.

Health Promotion Strategies for Breast Care	Mean	Interpretation
A. Those that can be done by an individual		
1. I am confident I can perform breast self-examination correctly.	3.24	Agree
2. If I complete my daily exercises regimen during the next year, it will decrease my chance of having breast cancer.	3.19	Agree
3. I feel that exercising at least five times a week will decrease my chance of having breast cancer.	3.14	Agree
4. When I complete monthly breast examination, I don't worry as much about breast cancer.	3.03	Agree
5. I feel it is important to exercise to improve my health.	3.36	Agree
6. I am sure of the steps to follow in doing breast self-examination.	3.14	Agree
7. If I take care of myself, I can avoid breast cancer.	3.21	Agree
8. If I take the right actions, my breasts will stay healthy.	3.19	Agree
9. I can pretty much stay healthy by taking care of myself.	3.30	Agree
Average	***3.20***	***Agree***
B. Those that can be done with the assistance of a health professional		
10. I have regular health check-ups to know if I have breast cancer.	2.68	Agree
11. Going to the clinic for clinical breast examination will help me find lumps easily.	3.67	Strongly Agree
12. I know health professional can perform clinical breast examination.	3.13	Agree
13. Regarding my breast health, I can only do what my doctor tells me to do.	2.88	Agree
14. I can only maintain my breast health by consulting health professionals..	2.73	Agree
Average	***3.02***	***Agree***
C. Negative Statements		
15. It is extremely likely I will get breast cancer in the future.	1.90	Disagree

16. The thought of breast cancer scares me.	2.84	Agree
17. I am afraid to think about breast cancer.	2.72	Agree
18. I don't have enough time to exercise.	2.20	Disagree
Average	***2.42***	***Disagree***
Overall Average	***2.88***	***Agree***

Understandably, the last group of items has the lowest average rating of 2.88, interpreted as "Agree", because they are negative items. Two of the four items have mean ratings of 1.90 and 2.20, interpreted as "Disagree." and the two other mean ratings of 2.72 and 2.84 are interpreted as "Agree." The student-respondents disagreed that they will likely get breast cancer in the future and that they don't have enough time to exercise, so at least they find time to exercise, but agreed on the other two items, about their fear of breast cancer, and that they have such fear.

The findings indicate a need to further orient both the PNU employees and the students on the strategies to promote good health, particularly breast health, for the early detection and prevention of breast cancer.

Question No. 3 Proposed curricular integration and intervention program to promote awareness of breast care and the early detection and prevention of breast cancer among women in a teacher education institution

Proposed Topics/Subject Matter for Curricular Integration

Listed in Table 23 are the possible topics/subject matter that may be incorporated in the curriculum , particularly in the different subjects/ courses offered in the biological sciences, like Biological Science, Human Anatomy and Physiology, Health Biology, Histology, and Ecology. Breast care may also be incorporated in the social sciences under gender issues, in Clinical Psychology, and even in P.E. and Health.

Although these topics were not directly determined as a result of the study, they were identified by the medical professionals involved in the research, specifically the medical doctor who conducted the orientation, and who has the knowledge as to what

women need, to become more aware of breast care and breast cancer.

The study was able to reveal some information on the students' knowledge about breast cancer and breast care and this information also helped the medical doctor to come up with the list of topics worth incorporating in the curriculum

The breast care practices of the respondents also served as basis in identifying topics that may be included in the curriculum and the breast care program developed. Their existing breast and health care practices are augmented and enhanced in the health care program.

Table 27. Suggested Topics/Subject Matter Related to Breast Care and Breast Cancer for integration in the Curriculum.

	Subject/Course	Topic/Subject Matter
1.	Biological Science	Overview of the Human Body; Endocrine System; Reproductive System
2.	Human Anatomy and Physiology	Levels of Organization, Integumentary System; Endocrine System; Immune System; Reproductive System
3.	Health Biology	Health Issues
4.	Histology	Tissues, Glands and Membranes; Benign and Malignant Tumors
5.	Ecology	Environmental Pollution (toxic fumes and chemicals) and health
6.	NSTP	Health Issues
7.	Social Sciences	Gender Issues
8.	Clinical Psychology	Emotional factors affecting the health of an Individual
9.	P.E. and Health	Importance of exercise in boosting up the immune system; health issues

Recommendations/advice for women from experts and researchers for the early detection and prevention of breast cancer were considered in preparing the Proposed Health Intervention Program.

Proposed Health Intervention Program to Promote Awareness of Breast Care and the Early Detection and Prevention of Breast

Cancer for the Women of the PNU

Objectives	Activities/ Topics	Persons Involved	Target Dates	Expected Output
1. Disseminate information about the breast care and breast cancer in the university	Putting up of posters and tarpaulin in the university announcing the launching of the breast care program; Distribution of flyers to the faculty, administrative staff and students; Classroom campaign to recruit faculty and students to join the breast care program	Health Professionals of the University; Researchers; Faculty; Administrative Staff and Students	June 1st month	At least 20% of the faculty, administrative staff and students will register for the breast care program
2. Develop awareness among the registered participants on the importance of proper breast care for the early detection and prevention of breast cancer	Orientation Program; Lecture on proper breast care and the risk factors of breast cancer; Demonstration on the proper way to undertake breast self-examination; Conduct of the pretest; Dividing the participants into groups of 10-15, with each group selecting its peer leader; Laying down the rules of the program; Distribution of the Consent Forms	Health Professionals of the University; Researchers; Faculty; Administrative Staff and Students	July 2nd month	Participants are ready for the program, and they give their commitment to join and strictly follow the rules of the program, and do the required activities.

3. Train peer leaders who will be in-charge of the groups and monitor the breast care activities of the participants	Training and orientation of peer leaders about their functions; Planning about the conduct of the program and identifying the activities that may be included	Health Professionals; Researchers; Selected Administrative Staff and Student Peer Leaders	July 2nd month	Program of activities Plans about the program; List of members per group
4. Maintain the participants' physical fitness and wellness	Conduct of physical exercises once a week for about 30-60 minutes	Physical Ed. Faculty; Researchers, Peer Leaders; Participants	July-Oct. four months	Monthly Report of members' attendance by each group peer leader;
5. Monitor the breast care activities of the participants	Monthly monitoring of participants' breast care practices; Monthly meetings of groups conducted by peer leaders	Peer Leaders; Group members	July-Oct. four months	Monthly Report of each group peer leader;
6. Evaluate the effectiveness of the program	Closing Program; Evaluation of the Program	Peer Leaders; Group members	Oct. Last month	Evaluation Report

CONCLUSIONS

The respondents still need to be more informed/knowledgeable about breast care, some factors that increase the risk of breast cancer, and the different types and frequency of breast examinations, when is the right time and how often they can undertake these examinations to detect breast cancer.

There is also a need for the respondents to take a healthier lifestyle and commit to regular exercises, to take good care of themselves and doing the right actions in caring for their breasts and in general, their health, to stay fit and healthy.

They should also seek the help of health professionals, particularly the medical doctors more often.

RECOMMENDATIONS

Necessarily, the health problems, particularly on proper breast care, among the PNU women need to be addressed seriously. Thus, the research recommends the following measures:

1. Plan and implement a breast care campaign in the University.
2. Conduct an orientation and training on proper breast care for the University women every start of the semester, with medical doctors and other health professionals as lecturers and trainers.
3. Implement an intensive year-round health care program that includes proper breast care among the women populace in the university. The breast care program implemented during the conduct of this research did not succeed in improving the breast care knowledge and practices of the participants probably due to its short implementation, ineffective monitoring of members by their leaders.
4. Choose and train peer leaders from among the administrative staff and students who can strictly monitor the breast care activities of the participants.
5. Integrate in the curriculum certain topics related to breast cancer and proper breast care.

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